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SPECIFICATION AMENDMENTS

Please replace paragraph 2 with the following rewritten paragraph:

In the fabrication of semiconductor integrated circuits, metal conductor lines are used to interconnect the multiple components in device circuits on a semiconductor wafer. A general process used in the deposition of metal conductor line patterns on semiconductor wafers includes deposition of a conducting layer on the silicon wafer substrate; formation of a photoresist or other mask such as titanium oxide or silicon oxide, in the form of the desired metal conductor line pattern, using standard lithographic techniques; subjecting the wafer substrate to a dry etching process to remove the conducting layer from the areas not covered by the mask, thereby leaving the metal layer in the form of the masked conductor line pattern; and ~~removing~~ removing the mask layer typically using reactive plasma and chlorine gas, thereby exposing the top surface of the metal conductor lines. Typically, multiple

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alternating layers of electrically conductive and insulative materials are sequentially deposited on the wafer substrate, and conductive layers at different levels on the wafer may be electrically connected to each other by etching vias, or openings, in the insulative layers and filling the vias using aluminum, tungsten or other metal to establish electrical connection between the conductive layers.

Please replace paragraph 11 with the following rewritten paragraph:

After the copper is electroplated onto the wafer, the wafer is frequently subjected to a CMP (chemical mechanical polishing) process to remove excess copper (copper overburden) from the electroplated copper layer and smooth the surface of the layer. Important components used in CMP processes include an automated rotating polishing platen and a wafer holder, which both exert a pressure on the wafer and rotate the wafer independently of the platen. The polishing or removal of surface layers is accomplished by a polishing slurry consisting mainly of colloidal silica suspended in ~~deionized~~ deionized

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water or KOH solution. The slurry is frequently fed by an automatic slurry feeding system in order to ensure uniform wetting of the polishing pad and proper delivery and recovery of the slurry. For a high-volume wafer fabrication process, automated wafer loading/unloading and a cassette handler are also included in a CMP apparatus.

Please replace paragraph 20 with the following rewritten paragraph:

The polymer additives may include low cationic charge density co-polymers having aromatic and amine functional group monomers. Preferably, the low cationic charge density polymers include benzene ~~aromatic~~ aromatic functional group monomers, such as benzene or pyrrolidone and aromatic amine functional group monomers, such as imidazole or imidazole derivative. Preferably, the low cationic charge density polymers have a cationic charge density of typically about 1~6 meq/g and a molecular weight of typically about 2,000~1,000,000. Most preferably, the polymers have a molecular weight of typically about 10,000.

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Please replace paragraph 34 with the following rewritten paragraph:

Suitable sources of copper ions include, but are not limited to, copper sulfate, copper chloride, copper acetate, copper nitrate, copper fluoroborate, copper methane sulfonate, copper phenyl sulfonate and copper p-toluene sulfonate. Such copper ion sources are typically present in a concentration in the range of from about 10 to about 300 g/L of electroplating solution. In a preferred embodiment, the cationically charged polymer additives of the present invention are present in the electroplating bath solution in a concentration of from typically about 5 ppm to about 100 ppm. An accelerator is typically present in the electrolyte bath solution in a concentration of from typically about 5 ppm to about 40 ppm. The accelerator may be any type of commercially-available accelerator known by those skilled in the art for accelerating a metal electroplating deposition process.

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Please replace paragraph 39 with the following rewritten paragraph:

As shown, in step ~~§1~~ 51 of Figure 2, after the trenches 27 are etched in the dielectric layer 26, the metal seed layer 19 is deposited on the sidewalls and bottom of the trenches 27. The seed layer 19 may be formed using conventional chemical vapor deposition (CVD) or physical vapor deposition (PVD) techniques, according to the knowledge of those skilled in the art. The seed layer 19 has a thickness of typically about 50-1500 angstroms.

Please replace paragraph 40 with the following rewritten paragraph:

As indicated in step ~~§2~~ 52 of Figure 2, the electrochemical plating (ECP) electrolyte bath solution 20 is prepared in the bath container 14. The electroplating bath solution 20 typically includes an accelerator additive having a concentration of from typically about 8 ppm to about 40 ppm, as

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heretofore noted. Next, as indicated in step ~~S3~~ 53 and shown in Figure 1, cationic charged polymer additives 25 of the present invention are added to and thoroughly mixed with the electroplating bath solution 20 to achieve a polymer additive concentration of from typically about 5 ppm to about 100 ppm. The anode 16 and wafer/substrate 18 are then immersed in the bath solution 20 and connected to the adjustable current source 12 typically through wiring 38.

Please replace paragraph 41 with the following rewritten paragraph:

As indicated in step ~~S4~~ 54 of FIG. 2, the cathode/substrate 18 is immersed in the bath solution 20. Accordingly, the seed layer 19 on the substrate 18 contacts the bath solution 20. Due to mass transfer of the polymer additive 25 in the electrolyte bath solution 20, substantially the entire surface of the seed layer 19 is contacted by the polymer additive 25.

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Please replace paragraph 42 with the following rewritten paragraph:

As shown in Figure 1A and indicated in step S5 55 of Figure 2, the metal layer 28 is electroplated onto the seed layer 19, typically as follows. The electroplating bath solution 20 is heated to a temperature of typically from about 10 degrees C to about 35 degrees C. In operation of the ECP system 10, the current source 12 applies a selected voltage potential between the anode 16 and the cathode/substrate 18. This voltage potential creates a magnetic field around the anode 16 and the cathode/substrate 18, which magnetic field affects the distribution of the copper ions in the bath solution 20.